

No 1 Reading

29-35 Station Rd, Reading.

Considerations arising from Fire Engineering Review

In April 2018, Breithorn Developments commissioned Jeremy Gardner Associates to conduct a fire engineering review of emerging proposals for No 1 Reading. Whilst the architectural design has evolved in areas of detail prior to the planning application being submitted in October 2018 the advice contained in JGA's report remains current. Post planning the technical design will address all matters of fire safety which will of course be dealt with under a separate building regulations approval.

For planning purposes only and in response to a specific request from the case officer the narrative below captures JGA's advice (in grey) and where appropriate Broadway Malyan's commentary.

For the avoidance of doubt it is the intent during the technical design stages to comply fully with all of JGAs recommendations or to identify suitable alternative measures having regard to emerging regulatory environment.

INTRODUCTION

The project is a new 28 storey hotel building in Reading containing retail/cafe space at Ground and First Floor, and a Hotel Leisure Level with restaurant/bar spaces at Second Floor. The bedroom levels are currently proposed between Levels 4-23, with the office levels from 24-27. The building will be served by two stairs with an additional open stair serving the Ground and First Floors only.

The proposals have reduced from 28 storeys to 22 storeys following pre application advice from RBC although the uses have remained the same. The advice provided by JGA is still relevant and the requirement for fire safety measures to be incorporated have informed the design and layout.

MIXED USE

The building will have a mixed occupancy of hotel, office, retail and restaurant/bar levels. These areas will be managed by different organisations and will share escape stairs. The mix of sleeping accommodation with another use is a key issue for the fire strategy. Building Regulations guidance recommends that consideration is given to the need for the hotel to be served by a stair which is independent of the office. As both uses would require access to two stairs, this would mean that a third stair would be needed.

However, the location of the office levels above the hotel levels works well for fire strategy as a fire in the office would not immediately put occupants of the hotel at risk.an example of this configuration is Wedge House on Blackfriars Road, which is currently under construction.

The building will need to evacuate simultaneously. An important consideration as the scheme develops will be how the fire alarm is configured to deal with an alarm in the office out of hours, as this would result in evacuation of the hotel for what could be a false alarm.

SPRINKLERS

As the office levels are more than 30m above ground, life safety sprinklers will be needed throughout the building.

FIRE ALARM AND DETECTION

The hotel areas should be fitted with an L1 standard fire detection and alarm system. An L3 system should be provided in the offices.

COMMON AREAS

Stairs and Final Exits

Lobbied Stairs

Both stairs will need to be lobbied at every level. An additional lobby should be provided to the south stair at all non-bedroom levels. On the hotel bedroom levels, the corridor acts as a lobby and so no additional separation is needed.

The north stair will be a firefighting core with a smoke vented firefighting lobby. The drawings show the firefighting lobby open to the entrance lobby at Ground, and to the café and restaurant on the Café and Hotel Leisure Levels. The firefighting lobby should be separated from these areas with an FD60S fire door.

Stair Sizing

Two lobbied escape stairs are proposed at every level. Both cores should have a minimum width of 1.2m. This will provide sufficient capacity for the upper levels.

Final Exits

The final exits from the stairs should open directly to outside or by way of a protected corridor which is separated from any accommodation by at least one smoke vented lobby.

The drawings show the north stair final exit via an entrance lobby at Ground, and the south stair final exit direct from the stair at Upper Basement Level. An exit should be provided from the north stair at Ground that opens directly to outside, and both the north and south stair final exits should be separated from ancillary areas by smoke vented lobbies. The final exits from stairs should be as wide as the stairs themselves.

The technical design will address the final stair configuration and exit door. The preferred option is for the stair to evacuate through the ground floor welcome area taking care to specify non combustible materials and to manage the space to ensure the fire escape strategy can be implemented if and when appropriate.

Disabled Refuges

Disabled refuges with emergency voice communication points should be provided in each stair or in adjacent lobbies at all levels other than Ground.

Storey Exits

850mm exits are sufficient at most floors. However, the Reception / Restaurant level at Second Floor will have a much higher occupancy than the other floors. We recommend exits are made as wide as possible. Two 1.2m wide exits (clear width) would provide capacity for 240 – 280 occupants, which we anticipate will be sufficient.

Larger occupancies may require a third stair serving just that level in order to avoid increasing the width of the two main stairs.

We do not anticipate this will be required as the spatial capacity and management thereof will limit occupancy within the constraints of the two stairs. For convenience an additional accommodation stair is provided between 1st and 2nd floors which contain the hotel reception, bar and restaurant.

Basement

Basement Stairs

Guidance recommends that if there is more than one escape stair from an upper storey of a building, one of the stairs should be stopped at Ground. However, given the provision of sprinklers, smoke extract in the northern core and lobby protection at basement level, we anticipate that extending both stairs to basement level will be fine.

We do not currently propose to extend the north stair to basement level.

Basement Smoke Venting

Smoke venting is needed in the basement. There are two options:

- Natural smoke venting – evenly distributed, high level smoke outlets equivalent to 2.5% of the floor area of the basement.
- Mechanical smoke venting – provide an extract duty of 10 air changes per hour. Equipment needs to be rated to withstand temperatures of 300°C for 1 hour. Sprinklers would also need to be provided in the basement.

FIREFIGHTING

Firefighting Core

A firefighting core is needed. The northern core is arranged well to provide this and should include:

- 2 hour enclosures to the firefighting stair and the firefighting lobby
- A wet riser within the firefighting lobby
- Smoke vented lobby at every floor. The most space efficient method of providing this is via a mechanically assisted smoke shaft. This would typically be 0.8m² in area but will be confirmed by the specialist supplier.
- AOV at the top of the stair with at least 1m² free area

Fire Hydrants

Fire hydrants should be provided within 90m of the fire main inlet.

Fire Vehicle Access

Sufficient vehicle access will be achieved via Garrard Street.

Garrard St and Station Rd frontages combined will provide access to more than 50% of the building perimeter.

STRUCTURE AND COMPARTMENTATION

Structure

Structure should achieve 2 hours fire resistance.

Compartmentation

The compartmentation should achieve the levels of fire resistance shown below;

Compartment floors 2 hours

Enclosure to stairs 2 hours

Enclosure to firefighting lift 2 hours

Enclosure to service risers 2 hours

Enclosure to life safety plant rooms 2 hours

Separation between office and other uses 2 hours

Separation between retail and other uses 2 hours

Refuse store 1 hour

Separation between bedrooms and common corridors 30 minutes

Other plant rooms / Cycle store 30 minutes

Basement protected corridor 30 minutes

ELEVATIONS

Glazing and Non-Fire Resisting Construction

The south elevation facing Brunel House will need to be fire resisting full height as it is on the site boundary. This also applies to the west elevation at Levels 1 to 4 facing Garrard House. Above Fourth Floor of the west elevation, and the elevations facing onto Garrard Street and Station

Road can be unprotected.

External Wall Build-Up

Fire code guidance recommends the external wall construction, including the core of cladding panels, of buildings with a storey more than 18m above ground should be of limited combustibility. As the building exceeds 18m in height, products which form part of the external wall construction should comply with this.

This does not apply to masonry cavity wall construction, or to cladding systems which meet the performance criteria given in BR 135 for the exact wall build up proposed.

External surfaces should also meet the recommendations given in Approved Document B, Diagram 40, for surface spread of flame. However, it should be noted that a Class 0 surface spread of flame rating does not mean the product is also a material of limited combustibility.

Potential Changes

Following the Grenfell Tower fire it is likely there will be changes to Building Regulations guidance. It is possible the use of combustible cladding and insulation materials will be prohibited in high rise buildings. There may also be additional requirements for sprinklers. It is also possible that some revised requirements will apply retrospectively. Whilst this is speculation there is already evidence that Building Control and Fire Authorities are less willing to accept combustible materials. Concerns have also been expressed by insurers who may be less willing to provide cover for buildings with combustible external wall materials. These risks should be carefully considered before proceeding with a design which includes combustible external wall materials.

The project team are alert to the probability of regulation changes and will act accordingly as soon as further details are known. At this stage we believe the the design approach has embodied fundamental principles of a robust fire safety strategy including the adoption of a two stair sprinklered building design. The submitted scheme will align with the advice received from the fire consultants. Technical design stages will inform material selection including combustibility and fire spread determined by building regulations requirements.

